Epi Info – Present and Future

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Background

Epi Info is a suite of public domain computer programs for public health professionals developed by the Centers for Disease Control and Prevention (CDC). Epi Info is used for rapid questionnaire design, data entry and validation, data analysis including mapping and graphing, and creation of reports. Epi Info was originally created in 1985 using Turbo Pascal. In 1998, the last version of Epi Info for DOS, version 6, was released. Epi Info for DOS is currently supported by CDC but is no longer updated. The current version, Epi Info 2002, is Windows-based software developed using Microsoft Visual Basic. Approximately 300,000 downloads of Epi Info software occurred in 2002 from approximately 130 countries. These numbers make Epi Info probably one of the most widely distributed and used public domain programs in the world. The DOS version of Epi Info was translated into 13 languages, and efforts are underway to translate the Windows version into other major languages. Versions already exist for Spanish, French, Portuguese, Chinese, Japanese, and Arabic.

Epi Info Development Team Structure

The Epi Info Development Team (EIDT) is located in the Division of Public Health Surveillance and Informatics, Epidemiology Program Office, CDC. The team is comprised of federal employees, contractors, and fellows. EIDT is structured like a small software development company. Staff are divided among job functions – management, development, and user support. Management functions are carried out by a project manager and a project lead. Development is carried out by four Visual Basic developers. User support, which includes quality assurance, training, documentation, and help desk maintenance, is carried out by a staff of four. EIDT follows accepted software development business practices, which include requirement gathering, system analysis and design, a rapid development cycle, defect tracking and review, and quality assurance.

Among different standards currently in use in the software industry, EIDT uses the Capability Maturity Model (CMM). CMM is an accepted industrywide model that describes an evolutionary improvement progression from an immature process to a mature, disciplined process and further states that the quality of software is determined by the process used to develop it. Various levels of CMM exist, from 1 to 5, for an organization. CMM level 5 is the highest level that an organization can achieve. Despite lack of experience in formalized processes for software development, EIDT has embarked on trying to improve the quality of Epi Info software by implementing processes required for CMM certification. The aim of EIDT is to achieve CMM level 2, which required the following attributes:

- Software project planning,
- Software project tracking and oversight,
- Software subcontract management,
- Software quality assurance, and
- Software configuration management.

Microsoft project is used to track the development process. Hopefully, with the implementation of CMM level 2 processes, EIDT will improve the quality of Epi Info, increase customer satisfaction, and minimize risk associated with software development.

In addition to adapting CMM process, EIDT is currently undergoing an evaluation of its management and software development practices, assessment of stakeholders, and end user requirement gathering by an independent IT consulting company.

Future of Epi Info

The information technology environment that created the original Epi Info is now a distant memory. In recent years, the capabilities of hardware and software available to public health professionals have increased tremendously. Within these frameworks EIDT is reexamining the role of Epi Info. The question of whether Epi Info should be a lightweight and agile disease outbreak investigation tool as was originally envisioned by its creator, or a robust application development platform as it is currently being used by many persons around the world is still open to debate. What is obvious is that Epi Info cannot continue to be all things to all people and it has to find a place among other tools available to public health professionals. The challenge is to continue to provide the right kind of tool to help public health professionals perform their work. The exploration of new software development technology, such as Microsoft .NET, is a part of the evaluation and refinement process for EIDT. Epi Info needs to be a product that can continue to be relevant after 18 years, like the original Epi Info for DOS that is still in use throughout the world.